

# Exhibit 3

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA  
SAN FRANCISCO DIVISION

ORACLE AMERICA, INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civ. A. No. 10-03561 WHA
	)	
GOOGLE INC.,	)	(Jury)
	)	
Defendant.	)	

**EXPERT REPORT OF PROFESSOR DOUGLAS C. SCHMIDT, Ph.D. REGARDING FAIR  
USE AND REBUTTAL TO GOOGLE'S OPENING EXPERT REPORTS**

**February 8, 2016**

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visualization of the SSO.<sup>102</sup> This package creates a “force directed” graphical layout of the nodes and edges, where nodes represent the classes and interfaces and the edges represent the inheritance and interface relationships between and among the classes and interfaces.

2) Visualization demonstrates the significant complexity and creativity of the SSO

104. The first step in creating the visualization was to extract relevant data. To get this data, I first analyzed the source code for Java SE 5 in a software program called Understand.<sup>103</sup> Understand is code analysis software that can analyze Java source code files to identify various types of dependencies and relationships between packages, classes, interfaces, and methods. Specifically, I extracted source code for the Java API packages from the Java SE 5 platform.<sup>104</sup> I loaded the source code for the 166 Java API packages that comprise the Java SE 5 platform<sup>105</sup> into the Understand tool to analyze the relationships and dependencies in this code. Understand extracted a list of class, interface, and inheritance relationships within the Java SE 5 source code.

105. I used the Python scripting language to extract the dependency and relationship data from Understand and format it into a CSV file. The CSV file format I used contains the relationships between the classes, interfaces, and inheritance that comprise the Java SE 5 Platform. This CSV was subsequently read by a D3 script, which produced graphical representations of the class and interface relationships within Java SE 5 on the browser. The following figures are graphical representations of the SSO of Java SE 5 and the portion of the SSO that Google copied in Android.

<sup>102</sup> See Appendix H for additional details on D3 and methodology

<sup>103</sup> See “Scitools Understand: Features,” SciTools, <https://scitools.com/features/#feature-category-dependency-analysis> (accessed Feb 8, 2016)

<sup>104</sup> TX 623 was a disc containing the source code for the Java SE 5 platform on operating systems (e.g. Windows, Solaris, etc.). I primarily used source code for the Java Development Kit (“JDK”) version 1.5.0 for Windows. See 0623.zip\0623\OAGOOGL0100209734\_HIGHLY CONFIDENTIAL - SOURCE CODE\licensebundles\jdk1.5.0\jdk-1\_5\_0-fcs-bin-b64-windows-ia64-15\_sep\_2004.zip\jdk1.5.0\src.zip\). In the case of six packages in the javax namespace, the source code was not included with the JDK. In those instances, I used the declaration code from Trial Exhibit 623 related to the Java Runtime Environment (“JRE”). See Trial Exhibit 623

<sup>105</sup> The 166 Java API Packages that comprise the Java SE 5 API Packages are listed at: “Java 2.0 Platform Standard Edition 5.0 API Specification,” <http://docs.oracle.com/javase/1.5.0/docs/api/> (accessed Feb 8, 2016)